

Amendment and Response

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Serial No.: 10/643,771

Confirmation No.: 4116

Filed: 19 August 2003

For: DENTAL CROWN FORMS AND METHODS

Remarks

The Office Action of 27 November 2007 has been received and reviewed. Claims 5 & 9 have been amended, non-elected (and withdrawn) claims 19-67 have been canceled, and new claims 68-73 are presented. Therefore, claims 1-18 and 68-73 will be pending upon entry of these amendments. Reconsideration and withdrawal of the rejections are respectfully requested as discussed below.

Claim Objection

Claim 5 was objected to because of the following informality: "scaled" should read – "sealed" – since it is designated an original claim. *See Office Action*, 27 Nov. 2007, page 2.

Applicants thank the Examiner for notification of this informality. It appears as though this informality was due to facsimile error. Nonetheless, claim 5 has been amended to correct such informality.

Reconsideration and withdrawal of this objection is respectfully requested.

Amended Claim 9

Claim 9 has been amended to recite that the hardenable dental material in the tooth-shaped volume is "hardenable dental material for forming a dental crown." Support for this amendment can be found in, e.g., the claims as originally filed.

New Claims 68-73

New claims 68-73 are presented with this response to provide Applicants with more comprehensive protection. Support for new claims 68-73 can be found in, for example, original claims 1-14, as well in the specification at, e.g., page 8, lines 1-28. Entry and consideration of new claims 68-73 are respectfully requested.

The 35 U.S.C. § 102 Rejection

Claims 1-2 were rejected under 35 U.S.C. §102(b) as being anticipated by Kahn (U.S. Patent No. 3,949,476). Applicants respectfully traverse this rejection.

For a claim to be anticipated under 35 U.S.C. § 102, each and every element of the claim must be found in a single prior art reference (M.P.E.P. § 2131).

Independent claim 1 recites a dental crown form including, among other things, hardenable dental material for forming a dental crown located within the tooth-shaped volume.

The anticipation rejection of independent claim 1 must be withdrawn because Kahn does not teach each and every element recited in independent claim 1.

For example, Kahn does not teach a dental crown form that includes, among other things, hardenable dental material for forming a dental crown located within the tooth-shaped volume as recited in claim 1. Instead, Kahn describes a device 16 that is "filled with wax, self-curing plastic, e.g. a dipolymer, acrylic resin or other medium which is readily worked when set (FIG. 7)." *Kahn*, column 3, lines 25-27. The wax or self-curing plastic is "used as the pattern for the investment material 28" for use in the "usual lost wax process" to form the "ultimate casting" (which is an actual dental crown). *See Kahn*, column 2, lines 49-52. Any wax or self-curing plastic used to form a pattern as disclosed in Kahn is not hardenable dental material for forming a dental crown as recited in claim 1.

The conventional "lost wax" process used to form articles as described in Kahn is, perhaps, more completely described in another reference cited in the Office Action – namely in U.S. Patent No. 6,283,755 to Bergström et al.. The "lost wax" process is described there at, e.g., column 1, line 65 to column 2, line 17. As discussed in Bergström et al., the wax/polymer used to form the mold is lost through sublimation, etc. while the (typically molten) material used to form the finished dental article takes the place of the wax/polymer.

As such, Kahn fails to teach hardenable dental material for forming a dental crown in a body as required for anticipation of independent claim 1 because the material in the body

disclosed by Kahn must be capable of replacement in a lost wax process, i.e., it is not suitable for forming a dental crown.

For at least the above reasons, Applicants respectfully submit that claim 1 is not anticipated by Kahn. Furthermore, because claim 2 is directly dependent on claim 1, claim 2 is also novel in view of Kahn. Reconsideration and withdrawal of this rejection are, therefore, respectfully requested.

The 35 U.S.C. § 103 Rejections

Claims 3-6, 9-10, 13-14, and 17-18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kahn in view of Bergström et al. (U.S. Patent No. 6,283,755).

Claims 7, 11, and 15 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kahn in view of Bergström et al., and further in view of Willison et al. (U.S. Publication No. 2004/0005277).

Claims 8, 12, and 16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kahn in view of Bergström et al., and further in view of Subelka et al. (U.S. Patent No. 6,696,507).

Applicants respectfully traverse these rejections and submit that Kahn in view of Bergstrom (and in further view of Willison et al. and Subelka et al.) fails to teach or suggest each and every element of claims 3-18 as required for *prima facie* obviousness.

- Claims 3-12

Independent claim 1 (from which claims 3-8 depend) and independent claim 9 (from which claims 10-12 depend) both recite a dental crown form including, among other things, hardenable dental material for forming a dental crown located within a tooth-shaped volume.

In view of the discussion above with respect to the anticipation rejection of claims 1-2, the obviousness rejections of claims 3-8 (which depend on independent claim 1) and claims 9-12 must be withdrawn because Kahn does not teach or suggest a dental crown form including

hardenable dental material for forming a dental crown located within the tooth-shaped volume.

Bergström et al., Willison et al., and Subelka et al., all secondary references cited in support of the obviousness rejection of claims 3-12, do not remedy these basic deficiencies of the primary reference (Kahn).

Further, no discussion has been provided as to why or how one of ordinary skill in the art would be motivated to replace the wax-like materials used in the lost-wax processes of Kahn (and Bergström et al.) with hardenable dental material for forming a dental crown as recited in claim 1 (from which claims 3-8 depend) and independent claim 9 (from which claims 10-12 depend).

As a result, the cited references do not support a *prima facie* case of obviousness with respect to claims 3-12.

For at least the above reasons, Applicants respectfully submit that claims 3-12 are patentable over Kahn view of Bergström et al., and further in view of Willison et al. and Subelka et al. Reconsideration and withdrawal of the obviousness rejections of claims 3-12 are, therefore, respectfully requested.

- Claims 13-18

Independent claim 13 (from which claims 14-18 depend) recites a dental crown including: a body defining an anatomically tooth-shaped volume, the body comprising a base and an incisal/occlusal region distal from the base; and a hollow handle attached to the body at a location removed from the base, wherein the hollow handle is in fluid communication with the tooth-shaped volume through a vent opening formed in the body.

The obviousness rejection of independent claim 13 must be withdrawn because Kahn and Bergström et al. do not teach or suggest each and every element recited in independent claim 13 as required for *prima facie* obviousness.

For example, nothing is identified within the disclosure of Kahn that teaches a hollow handle (as recited in claim 13) as noted in the Office Action. To remedy this deficiency,

Bergström et al. has been cited, which is alleged to "teach a dental form comprising a hollow tubular handle 5'." *Office Action*, 27 Nov. 2007, page 3.

Bergström et al. does not, however, actually teach a hollow handle as asserted in the Office Action. Instead, item 5' of Bergström et al. is a post of a dental implant component upon which a wax pattern may be formed. For example, column 5, lines 39-41 of Bergström et al. recites the following: "[a] wax pattern is then built-up on the dental implant component 1 around the post 5 such that the post 5 projects distally from the wax pattern." Therefore, Applicants respectfully submit that the post as described in Bergström et al. is not a handle as recited in claim 13.

Further, it is asserted in the Office Action that "[i]t would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the dental form of Kahn to have the handle of Bergstrom et al. for relieving hydrostatic pressure in view of Bergstrom et al." *Office Action*, 27 Nov. 2007, page 3. Applicants submit a person having ordinary skill in the art would not modify the dental form of Kahn with the post 5 of Bergström et al. because the dental form of Kahn is for forming a wax mold on the inside of the dental form (*see Kahn*, column 3, lines 9-10) while the post 5 of Bergström et al. is for forming a wax pattern around the outside of the post.

"The Supreme Court in *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, ___, 82 USPQ2d 1385, 1396 (2007) noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit." M.P.E.P. § 2142. No reasoning or discussion has, however, been provided as to why one of ordinary skill in the art would take two such different processes and modify them to reach the inventions recited in claims 13-18.

If this rejection is maintained, clarification is respectfully requested as to why a person having skill in the art would add the wax formation post of Bergström et al. to the exterior of the form of Kahn given the significant differences between the two approaches.

Also, Willison et al. and Subelka et al. fail to remedy the deficiencies of Kahn and Bergström et al.

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For at least the above reasons, Applicants respectfully submit that a *prima facie* case of obviousness has not been established with respect to claims 13-18 over Kahn view of Bergström et al., and further in view of Willison et al. and Subelka et al. Reconsideration and withdrawal of this rejection are, therefore, respectfully requested.

Summary

It is respectfully submitted that the pending claims are in condition for allowance and notification to that effect is respectfully requested. The Examiner is invited to contact Applicants' Representatives, at the below-listed telephone number, if it is believed that prosecution of this application may be assisted thereby.

Respectfully submitted

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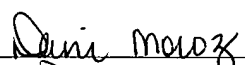
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